

MINUTES





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Objective & Outline:

The objective of the GEO-CRADLE workshop *"Accelerating EO-powered businesses and market take-up"* was to provide various organisations along the value-added service chain with insights into end-user needs and underline the opportunities for entrepreneurial companies to build up their business models on the exploitation of EO data and services. The speakers were project partners as well as external end users and local entrepreneurs, and the format of the workshop was a synthesis of presentations and panel discussions in amphitheatre style.

Part 1: Using geo-information services in the Balkans (13:00-14:30)

In this part confirmed end-users shared their experience and talked about their needs.

 <u>Introductory notes: GEO-CRADLE: Integrating regional capacity & building ecosystems</u> (15')

Speaker: Haris Kontoes, Project Coordinator, Research Director, NOA



Dr Kontoes gave an overview of GEO-CRADLE presenting first of all its objectives: 1) to create a multi-regional coordination network (North Africa, Middle East and Balkans, hereafter RoI); 2) to support the effective integration of Earth Observation capacities in the RoI; 3) to facilitate the engagement of the complete ecosystem of EO stakeholders in the RoI; 4) to promote the uptake of EO services and data in response to regional needs; and 5) to enhance the participation in and contribution to the implementation of GEO, GEOSS, and Copernicus in the RoI. To this end GEO-CRADLE aims to pave the ground for a new large initiative or flagship project in the region that



represents a great interest from geostrategic, climate, and cultural point of view. Dr Kontoes underlined that GEO-CRADLE provides a geographically wide and thematically deep representation of EO players from the RoI, bringing together 23 entities which undertake Co-leading or key contributor roles in (i) GEO tasks, (ii) GEO & Copernicus flagship projects, and (iii) Data gathering, dissemination, and service provision. The GEO-CRADLE partners support policies advocating equal opportunity for women and men, and specifically support the involvement of women in their field of activities: women are 39% of the personnel involved in the project, and 31% of the Work Packages are led by women. Dr Kontoes referred to the 4 main pillars which underpin the GEO-CRADLE concept: 1) Exploit synergies and cross fertilization, 2) Apply an impact driven methodology, 3) Implement a top-down and a bottom-up approach for GEO & Copernicus in the ROI, and 4) Achieve a lasting and sustain-able effect in the ROI.

Dr Kontoes explained that GEO-CRADLE started with the analytic inventory of the regional capacities and the detailed reporting and analysis of user needs. The output of the inventorying activities will enable the execution of an in depth gap analysis, and the assessment of the maturity per country/region in the implementation of the GEO and Copernicus vision in the Rol. The gap analysis, and the level of maturity in the RoI will set forth to identify the priorities in relation to regional challenges, and from those challenges to define a concrete action plan to tackle those challenges by defining and implementing four pilot studies in the following domains: 1) Adaptation to climate change; 2) Food security & water extremes management; 3) Access to raw materials; and 4) Access to energy. Dr Kontoes noted that the focus of the pilots is by no means set on developing new technology or science. On the contrary, it lies on utilising the existing capacities (networks, datasets, models, EO skills), engaging a critical mass of relevant actors from the regional EO ecosystem and, eventually, showcasing through a concrete scheme how the various challenges can be tackled by the GEO-CRADLE network. Dr Kontoes stated that this GEO-CRADLE network will constitute a valuable delivery of GEO-CRADLE, as well as the Regional Data Hub, which will act as a "one-stop-shop" for Rol specific data/information/knowledge access for EO players, service providers, and end users. GEO-CRADLE will finally produce a roadmap for the future implementation of GEOSS and the uptake of Copernicus in the Rol.

Best practices & end user needs (60')

Moderator:TeodoraSecaraDeputySecretaryGeneral& UserProgrammeCoordinator, EurisySpeakers:Ilir Ajdini, National Food Authority, AlbaniaSpas Tumbev, Executive Forest Agency, BulgariaBojan Tubic, Public Company VojvodinaSume, Serbia

• <u>Q&A (15')</u>

Questions for discussion:

- What were the end user needs and how geo-information data services responded to those needs?
- What were the challenges to implement the services (if any)?
- How did the user and service provider come to work together?
- Problem, solution, result for confirmed users of GI.



Eurisy's main contribution to GEO-CRADLE is to place the focus on the needs of the geoinformation end users. Inviting them to the GEO-CRADLE workshops is one way of doing so. In line with this strategy, there was a session dedicated to the needs and experience of end-users from Albania, Bulgaria and Serbia.

The objective of such sessions is to understand, through examples (or case studies), how the GEO-CRADLE output can cater for those needs. Not only technical needs were considered, i.e. the simple question of what geo-information would be useful for. The service provision channels via which the end-users obtain the geo-information were also considered: where they procure the services (their maps!), how they organise such procurement, what expertise they have in interpreting data (if any) and so on. This kind of feedback also aims at informing the analysis of gaps in the value-added chains in the region – one of the work packages of the GEO-CRADLE project.



Representatives of the Public Forest Company VojvodinaSume, of the Bulgarian Executive Forest Agency and of the Albania Food Authority showcased their organisations. End-users organisations in the audience — the SrbjaSume, the Serbian Forest Republic, the Geodetic Authority Serbia, and the Serbian Civil Security — also contributed.

In the case of VojvodinaSume, the needs are related to both the economic and the environmental value of the forest. The wood is exploited for energy production or it is sold for higher value products, such as furniture. But the forest also captures CO_2 emissions and provides the habitat for whole ecosystems. This means that users need to know about forest coverage, volume, tree height, wood quality, illegal deforestation, but also about its overall health. In Albania, needs concerned food traceability in particular. Albania exports cereal and other high-value products such as honey — so quality and origin certification is of key interest for the National Food Authority.



Amongst the findings of this session was that, when it comes to forest management, users' expertise varies. VojvodinaSume is a particularly advanced user (see here), with a high degree of autonomy in procuring either satellite or aerial data according to their value-for-money, and with regards to the needs of the administration. As the SrbjaSume representative confirmed, some applications demand a higher level of accuracy and tailoring of the information: tree species, tree disease, volume and quality of the forest.

But both in the case of advanced and less advanced users, the EO specialists in the room noted that there is potential to extract much more information from the data they already have, from a purely technical point of view. However, this would entail organising/contracting a service that specializes in data processing more than the users themselves, or their existing providers. So though technically this may be feasible, from an organisational or budgetary point of view it is less obvious how the users can make more of the data they already have.



A possible reason why some regional administration is more successful in the use of satellite applications is that it may be easier to organise such services on a regional scale. Or sometimes it can just rely on a particular individual who happens to take the initiative and is successful in seeing it through. In Bulgaria, due to budgetary constraints for basic forest inventories, satellite data is not the go-to solution either, just as the 10-year update is due.

Different organisations work in different gears, and some have localized needs. And yet there is scope for them to cooperate on a pan-Balkan level. Already in Serbia the common exploitation of forest-related data is set to improve, as the National Geodetic Authority (the only state organisation officially in charge of providing public and private sectors with maps) already provides some forest-related data, and is to open it up further in the upcoming year. VojvodinaSume and SrbjaSume are independent organisations and work over different territories, but considering joint procurement and sharing of some data may be a win-win.



What Serbian, Bulgarian and no doubt other users from neighbouring countries have in common are not just the general forest practices and needs. They are also either part, or on their way to become EU members. This means various EU regulations (whether environmental or management standards) will apply in a similar way and will homogenize practices to a certain extent. Such regulations could further inform geo-information providers, and indeed the GEO-CRADLE consortium, on potential market needs.



Part 2: Funding your geo-information service (15:00-16:00)

- <u>Introductory remarks and session presentation (5')</u> Moderator: Igor Milosavljevic, Business Developer, InoSens
- <u>EU Funded Acceleration Programmes in the Balkans (15')</u> *Speaker:* Grigoris Chatzikostas, CEO, InoSens: presently running and upcoming *EU-funded acceleration programs for SMEs and start-ups active in ICTs for Agri-food in the Balkan region (FRACTALS & KATANA)*

Mr. Chatzikostas presented opportunities for SMEs and startups in the region to support their innovation efforts in the agrifood sector, applying modern approaches and technologies



including EO. EU supported accelerators offer both financial support and comprehensive trainings to help develop mature market solutions. He accentuated that we cannot feed the world of tomorrow with the agricultural practices of today, and that embracing emerging technologies is needed by the sector to drive gains in efficiency and productivity.



Mr. Chatzikostas started by giving a short overview of the accelerator project, FRACTALS (FP7 project No. 632874), currently concluding. He gave examples of regional SMEs that harnessed funding and training opportunities from the program to develop EO-based solutions in the agrifood sector.

He followed with the first public presentation of the successor accelerator program to FRACTALS: KATANA (Horizon 2020 project). Similar to FRACTALS, KATANA aims to provide access to knowledge, technology, capital and markets to companies by leveraging multipliers from cross-border/cross-sectoral cooperation. It has several innovations compared to FRACTALS: evaluation based on peer-review, matchmaking (between complementary cross-sectorial/cross-border companies), business boot-camp training for a wide selection of SMEs, dedicated mentorship for best performers, etc. The project will also have three large scale demonstrators: marketplace for precision agriculture, IoT platform for agrifood, toolbox for the design of functional foods. The project aims to support SMEs and startups to explore solutions in the agrifood sector using ICT/advanced technologies and emerging industries.

GEO CRADLE's efforts to promote connectivity of EO in the region create a valuable data resource for SMEs and startups to exploit in developing promising new solutions for the market.



<u>Regional & International Funding Schemes (15')</u> Speaker: Mladen Radisic, Enterprise Europe Network: presents EEN cooperation and funding opportunities at a regional and European level.

Mr. Radisic presented the opportunity for research and innovation projects exploiting EO-based technologies within Horizon 2020. This is a flagship R&I initiative, and participation of selected Balkan countries is below average. SMEs are encouraged to take part in proposals. Regional companies that recognize that participation in Horizon 2020 can benefit their R&I have options to explore opportunities within the region.



Mr. Radisic started his presentation with basic information on H2020 – goals, timeframe, eligibility, etc. He proceeded to present several relevant calls from H2020: FTI Pilot, calls within the scope of the SME instrument, two SC5 calls, one SFS call and two EO calls. He included the specific challenge, the scope and expected impact focusing on the roles that SMEs could have in upcoming proposals.

Mr. Radisic also presented EEN and the work that they do in Serbia. It is the largest network in the world that provides support to small and medium-sized enterprises. In Serbia it includes several key incubators, the Chamber of Commerce, Universities and high-preforming Institutes. He went over the varied services available to interested SMEs and that they cooperate in custom ways that meet their needs. One service is providing information on open calls for funding research and innovation projects in the framework of H2020. Mr. Radisic presented how SMEs could join and potential benefits, and stressed that membership was voluntary and free.



• <u>Q&A (25')</u> Questions for discussion:

- Applications for European projects benefit from a track record of experience in projects. What is the road to your first project?
- What are the advantages to seeking EU funding opportunities compared to VC and other private sources? What are the challenges? Can they coexist?
- How can EU funding be integrated as a part of a financial strategy of an SME or startup?
- How can SMEs profit from the GEO-CRADLE project and how they can be engaged in GEOSS, and Copernicus regional initiatives & projects?
- How can SMEs become part of the GEO-CRADLE network and what is their benefit?

There was one question about the specifics of the upcoming KATANA call, including the timeframe and greater clarification on the application process.

The final question concerned how EO fits into KATANA. Mr. Chatzikostas referred to the requirement for use of ICT/advanced technologies as a central pillar to the KATANA accelerator; EO will be directly promoted by the consortium during its training events as a promising set of technologies that can enhance agricultural efficiency and productivity – there are still low – hanging fruitful solutions that have not been fully commercialized and present both opportunities in the project as well as on the market.

Part 3: Using EU funds for EO based services: Case studies (16:15-17:30)

- <u>Introductory remarks and session presentation (5')</u> Moderator: Lefteris Mamais, GEO-CRADLE Technical and Quality Assurance Manager
- Operational cases of EO based services case studies (40') Speakers: Service providers that have participated in EU-funded ICTs in Agri-food calls Silvo Zlebir, Senior Adviser, Slovenian Environment Agency Dragutin Protic, Co-Founder, Gllab doo Dragan Turkulov, Project Manager, Prozone

Mr Mamais, the Technical Manager of GEO-CRADLE, presented the objectives of this session dedicated to concrete testimonies by EO actors in the Balkan region.

The main aspects touched upon in this session were the challenges related to the utilization of EU funds for EO-related activities, the key elements to be taken into account when establishing an EO-based solution in the market and, finally the importance of collaboration between regional actors (see figure below).





Following this short introduction, Mr Mamais invited the three speakers on the podium to present their experience in using or setting up EO-based services in their respective sectors.





The first presenter, Dr Silvo Zlebir – Senior Expert at the Slovenian Environment Agency, explained the scope and outputs of BOBER project. This project utilized the EU Cohesion Fund to upgrade the water environment monitoring capabilities in Slovenia. As a "pure" capacity building project, BOBER aimed at improving the monitoring infrastructure, knowledge base and forecasting capabilities of the Slovenian Environment Agency for the water environment. The outputs of this project were significant and visible: Slovenia now has state-of-the-art hydrological, meteorological and computing/modelling capacities used for regular monitoring, emergency management (i.e. floods, drought monitoring), and decision-making support tools. Even more, Slovenia has adopted an open policy for the majority of the data produced allowing for better cooperation within and beyond the countries borders.

The next presenter, Dr Dragutin Protic from Gilab d.o.o, highlighted the objectives of the Horizon 2020 project APOLLO and underlined the benefits from his participation in it. APOLLO has kicked off in May 2016 with the aim to build an advisory platform that utilizes Earth Observation data to provide agricultural services to smallholder farmers. As an Innovation Action, this project entails the development of operational services that shall be commercially exploited by the end of the project. Over and above the specifics of APOLLO, Dr Protic emphasized the importance of such projects for the exploitation and cross-fertilisation of technological solutions developed by partners across and beyond the EU. Thus, research institutes and SMEs in Serbia and the Balkans were strongly encouraged to participate in such projects and seek further collaboration with their counterparts in other countries. Dr Protic recognized the importance of the support that GEO-CRADLE will be providing in establishing and solidifying the ecosystem of EO actors in the region also in relation to joint R&D initiatives.

Next on the podium was Dr Turkulov from Prozone, who presented the case of the "Sdop" project for the smart detection of pests. This project was selected and incubated through the FRACTALS project (see previously), and has been running since June 2015. This presentation offered useful insights on the challenges that start-up companies face in commercializing and scaling up their EO-based technological solutions. Prozone – as Gilab in the presentation before – underlined the importance of meeting end-users' requirements both on a technological level but also from a practical implementation point of view.

• <u>Q&A (25')</u>

Questions for discussion:

- Present their projects
- How did they find out about the funds? How was the application process? What did the funds cover?
- Did they encounter any challenges along the process of obtaining funds? What skills needed to be learned?
- Who are their end-users both confirmed and potential?
- Do they face any limitations in creating products for end users and what were their solutions to solve those challenges?
- What advantages did they recognize with developing EO solutions for identified problems?



- What are the advantages and disadvantages of EU-funding compared to other sources (i.e. VC funds)?
- To which extent their activity is linked with the prospects of GEO-CRADLE for setting up regional priorities?
- Have they defined or offered services in the thematic domains of GEO-CRADLE which address priorities at regional scale?
- Could they refer to user needs with regional aspect?

Following the presentations, the audience had the chance to engage in a lively discussion around the challenges and key factors to ensure the successful and sustainable exploitation of EU-funded project results. Dr Zlebir underlined that through the upgraded infrastructure and the open data policies in Slovenia, the corresponding water environment monitoring sector has seen a significant momentum increase. Similarly, the representatives of SMEs (both Dr Protic and Mr Turkulov and attendees in the audience) have underlined the significant role of networking and know-how exchange as well as the boost received by such projects for the first phases of commercialization. In response, Mr Mamais explained that GEO-CRADLE is inventorying the capacities of EO stakeholders in the region, will set up a regional Data Hub facilitating data access and sharing and, finally, will establish a networking platform on the GEO-CRADLE portal. Mr Mamais invited all participants to be actively involved in these activities as they can gain significant support in promoting their technological solutions to the market.

<u>Conclusions and session wrap-up (5')</u>

The discussions showcased confirmed and potential users of geo-information services, promoted knowledge transfer and cross-sector fertilization of good practices in the energy, climate change, food security and access to raw material sectors. Furthermore, the workshop presented the existing incubators and funding opportunities for start-ups and SMEs interested in using geo-information. This workshop also allowed WP2 and WP3 task leaders to gather valuable data for their end users and gap analysis reports, as well as verify existing findings.



GEO-CRADLE Project Meeting

Roadmap and action plans for WP3 in light of WP2 outcomes

www.geocradle.eu

15 July 2016 Novi Sad, Serbia







GEO-CRADLE: Coordinating and integrating state-of-the-art Earth Observation Activities in the regions of North Africa, Middle East, and Balkans and Developing Links with GEO related initiatives towards GEOSS

MINUTES





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Objective & Outline:

The objective of this GEO-CRADLE project meeting *"Roadmap and action plans for WP3 in light of WP2 outcomes"* was to discuss the way forward for WP3 (gap analysis) on the basis of the inventory analysis from WP2 and other inputs from partners.

On the basis of WP2 results, task leaders and other partners contributed feedback on:

- Needs of the surveyed candidates and/or are there similar users of GI among the end-users interviewed any confirmed/transferable good practices? (T2.4)
- Regional capacities to potentially cater for the needs of the pilots organisations (data, in-situ, IT): description of potential value-added chains. (T2.1-2.3)

In addition, drawing on the outcomes of WP2 and taking into account the objectives of WP3, project partners should agree on a scheme for assessing regional maturity.

Project Progress (09:00-09:45)

Speakers: Haris Kontoes, Project Coordinator, Research Director, NOA

Lefteris Mamais, Technical & Quality Assurance Manager, NOA

Dr Kontoes and Mr Mamais presented the progress of the project so far, as well as the next steps, and set out the goals of the day and the expected outcome.





A discussion followed on the work during the first 6 months of the project and how the project continues.

Key points:

- Deliverables: All deliverables have been submitted on time so far. After discussion with the EC Officer, the deliverable on user needs was postponed for the end of August. The final approval of the deliverables by the EC is pending. Comments may be received any time.
- Milestones: Completion of Advisory Board synthesis (final); Inventories (initial); GEO-CRADLE Portal (initial).
- Stakeholder engagement: Strong participation in meetings (KOM, Berlin, Cairo, GEO, etc.); Good traction with other GEO projects and the GEO Secretariat; Strong collaboration between the IT teams of GEO-CRADLE, and GEOSS portal for setting up an interoperable RDH; Need to engage stakeholders at country level (see WP2) and start building GEO-CRADLE network, providing value to stakeholders via the portal and other activities.
- Communication activities: Website launched and now migrating to more functional and attractive portal; Newsletter launched; Social media active; Need to intensify dissemination/communication activities at country level.
- Working together: Good cooperation among partners, productive coordination, and overall performance according to the QA standards.

Key next steps:

- T3.1 Gap Analysis (M5-M9): Perform a thorough gap analysis relying on the reported user needs (T2.4). Actions will be undertaken in WP3 with the support of WP2. Under the responsibility of WP2 &WP3 leaders, and as outcome of this meeting, an action list for the period M5-M9 is to be generated and circulated between the partners. Under the responsibility of WP3 leader, a simplified report (working document) will be generated on a monthly basis referring to each action item.
- T3.2 Maturity Indicators (M6-M26): Under the responsibility of WP3 & Task 3.2 leaders a list of indicators and the relevant criteria for assigning a value to each indicator in the range of beginner, first traction, active engagement, fully swing, or any other type of grading as appropriate, will be generated by M6. The list of indicators will be circulated to the partners for consultation, and be consolidated by M7. The country's maturity assessment will be initiated relying on knowledge from the questionnaires, and also through desk research by M7. As many countries as possible will be covered from the RoI, and the first assessment will be submitted by M9.
- T3.3 Priorities in relation to regional challenges (M7-M10): Under the responsibility of WP3 with the support of WP4: regional feedback and report (through written statements) will be received on the strong interest of the regional stakeholders, decision makers, and policy makers, but also of the GEO and Copernicus, on the proposed pilot activities and the prospect for scaling them up to regional initiatives through large scale projects.



WP2 Task Results (09:45-10:45)

Speakers:Task 2.1: Space-Borne Capacities, CIMA representativeTask 2.2: In-Situ Networks, EGS representativeTask 2.3: Modelling and Computing Facilities, IPB representativeTask 2.4: User Need Analysis, EURISY representative

Questions for discussion:

- Are the available observational capacities and data sources to local/regional level sufficiently accessible and relevant to supply the successful implementation of operational services? Which are they?
- Are there sufficient modeling capacities to turn these data into operational services? Are there any gaps? How can Geo-Cradle respond to these gaps?
- What is the awareness level of end-users in regards to EO? What needs were identified that can be met by EO technologies or Copernicus? What are their relationships to product providers?

Task Leaders introduced the results of WP2 (per country/region) and invited project partners to discuss how the existing data value chains correspond to those needs & what are the gaps & solutions.







The results from the first 5 months of the project were encouraging regarding the GEO-CRADLE survey of the regional EO capacities and user needs in the RoI. The country partners were invited to continue their active participation because their intense involvement is fundamental for the success of the project.

The total number of participants to the survey for mapping the status of the three capacities, namely Space-Borne Capacities (Task 2.1), In-Situ Network (Task 2.2), Modelling and Computing Facilities (Task 2.3), was equal to 164 (check done on June 10, 2016). There were 97 participants from the Balkans and 57 participants from the MENA. In addition, 10 more participants from other countries filled in the survey.

Some key points of the information collected through the questionnaires are the following:

- EO data exploitation is the capacity that 62 Organisations stated that they have as unique one and, in general, it is the capacity with the highest frequency among the participants to the survey;
- Ground-base/in situ networks is the capacity that 23 Organisations stated that they have as unique one;
- Modelling/computing and Modelling/computing & EO data exploitation are the combinations of capacities with the third highest frequency among the participants (12 Organisations);
- Ground-based/in-situ & Modelling/computing & EO data exploitation are combinations of capacities represented by 9 Organisations;



- 25 Organisations have Space-borne capacities: EO satellites, Ground Segment (GS), EO satellite acquisition stations & antennas, Mirror sites of GSs, Core GSs, etc. They will be included in the deliverable D2.4 "Inventory of Space-borne capacities".
- 62 Organisations have Ground-based/In-situ monitoring networks/facilities (of active or passive remote sensors, meteo/atmospheric/water sensors, etc). They will be included in the deliverable D2.2 "Inventory of in-situ instrumentation and regional networks".
- 55 Organisations have Modelling and computing processing capacities. They will be included in the deliverable D2.3 "Inventory of numerical modelling and computing facilities".



Regarding the User Needs Analysis (Task 2.4), after defining the target group (end users of geoinformation data), each partner was asked to submit at least eight interviews from their countries. The use of common guidelines allowed project partners to be completely autonomous in identifying and carrying out the interviews. During the first round of interviews, from February to March 2016, 30 reports were received from 17 pure end-users organisations from 11 countries in the region, and 12 more reports from other organisations expressing valuable user needs which were taken into consideration in the analysis. During the second round, the challenge was to determine and support partners in reaching eligible end users, focusing on the countries with fewer submissions. Finally, the workshop has been an opportunity to further enrich the picture on geo-information needs in the Balkans. From the first round of interviews it was evident that the political and economic context, as well as the geographic location and landscape of the countries, determine (relative) cohesion areas of uniform needs and contexts. A common predominant topic in fact is climate change and its water management aspects (the use of water for irrigation, flood risk management, coastal zone management, etc). Furthermore, some users quoted very specific data needs (e.g. high-performance counter current chromatography), while most quoted geo-information needs (e.g. soil quality for vineyards, urbanization maps, risk maps, and so on). According to the needs of the pilots and the other work packages, this overview of needs will be fine-tuned and finalized in the next phases of T2.4.





WP3 Task Needs (11:00-12:30)

Speakers: Task 3.1: Gap Analysis, INOSENS representative

Task 3.2: Maturity Indicators, EARSC representative

Task 3.3: Priorities in relation to Regional Challenges, CERT representative

Task Leaders presented the needs of WP3 and invited project partners to discuss and agree on the content and methodology of their contribution.





Mr. Grigoris Chatzikostas and Mr. Igor Milosavljevic from InoSens presented the Gap Analysis (Task 3.1). They started by outlining the overall structure of the work to be done, which was to draw upon information from previous projects, end-user inventorying results from Task 2.4, capacity inventorying results from Tasks 2.1, 2.2 and 2.3 and finally an indicator-based synthesis to identify EO gaps in the Rol.

For most of the presentation, the presenters stressed the structure of the task and the roles and responsibilities expected from the partners. InoSens, as task leader, will develop a systematic checklist to identify what is specifically expected for each country, what information is needed in surveying efforts, and will coordinate with country partners to ensure that this information is provided by both surveying and desk research. It was stressed that desk research involves both passive and proactive approaches; that is, internet searches as well as making phone calls and interviews. WP2 task leaders in charge of inventorying will assist T3.1 leaders in monitoring progress. The presenters made clear that the gap analysis is highly dependent on inventorying and that country partners are responsible for the quality provided for gap analysis activities, and hence the quality of results. A timeline was reviewed, with two and a half months for this work, and a progress check two weeks before the deadline.



Mr. Geoff Sawyer, Secretary General of EARSC, presented the Maturity Indicators (Task 3.2) as Task Leader. This section is a novelty developed by the GEO CRADLE project with the goal to determine the maturity of the state of EO in countries in the RoI by using clear and robust indicators. The task will develop an efficient visual manner to present this information to boost dissemination – this will include both a table with graphic representation of indicator scores (e.g. circle with 4 sections pertaining to completeness) and a score card for every country.

The presenter went through the tentative indicators developed by the EARSC team to seek feedback from the consortium. There are three sections: capacities, cooperation and uptake. The first section,

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capacities draws to a large degree on inventory results, but must be complemented with desk research. The first subsection deals with national infrastructure, the second with the critical mass of EO researchers, the third with the industry base, the fourth with space agency/authority and finally the fifth section deals with initiatives for capacity building. The cooperation is partly based on inventory results, yet requires considerable desk research. This section includes subsections that deal with: impact of GEO, impact of Copernicus, participation to other international efforts and availability of EU funding. The final section, events, also contains subsections relating to the state of EO: events, dedicated dissemination activities, national policy implementation and penetration. The responsibility for desk research rests with country partners, and they must engage in both passive efforts (internet search, literature review, etc.) and proactive (interviews, phone calls, etc.).

The proposed approach was well received. There was some discussion regarding definition of finer points for certain indicators. For example, how an EO academic course/program would be defined, if it would have to be explicitly or implicitly related to the subject. That is, would a GIS intensive program qualify as EO?



Dr. Hend Ben Hadji from Le Centre d'Etudes et de Recherche des Télécommunications (CERT) presented the Priorities in Relation to Regional Challenges (Task 3.3) as Task Leader.

To start off with, she reviewed the input to be used for the task. Results from End-user analysis (Task 2.4) will be used. In addition, the Gap Analysis resulting from Task 3.1 will be used as an input. This work has not yet been conducted so elements of interest for Task 3.3 were presented: what challenges can be identified, on the country level and on the regional level?; what are cross-cutting issues across the thematic areas (e.g. policy, financing, capacity building, etc.)?; and what recommendations can be made on the basis of the findings?. Finally, Maturity Indicators from Task 3.2 will also be used as an input. Actually benchmark results and the maturity indicators will provide a useful input for Task 3.3. Additional desk research is expected of country partners. A questionnaire will be provided by CERT for these purposes.



Dr. Ben Hadji also presented the methodology that she proposed. Using the inputs, a priority matrix will be constructed for proposed priorities in the RoI identified through synthesizing inputs on the basis of relevance (scope and objectives), impact (magnitude, speed, sustainability, adverse effects) and feasibility (governance, capacity, funding availability, additional factors). By scoring priority areas, clear recommendations can be provided to guide the set-up of WP4 pilots to ensure relevance and maximum impact of GEO CRADLE activities.

Overall, there was strong support expressed in the presented approach by project partners.

Markets maturity assessments and action plan (13:30-15:30)

<u>Advisory Board members introductions & feedback</u>

The role, the synthesis and the expected contribution of the Advisory Board (AB) were presented by the Project Coordinator Haris Kontoes.



GEO-CRADLE will be assisted and guided by a number of known experts who compose the project's AB, the invitation of whom took full account of the specific objectives that GEO-CRADLE seeks to achieve. The members of the AB:

- will support the alignment of GEO-CRADLE activities to the strategic priorities of key organisations (ESA, EC-Copernicus, GEO Secretariat);
- will provide expert advice for the specific thematic areas addressed by the project through the pilots: 1) adaptation to climate change, 2) improved food security and water extremes management, 3) better access to raw materials, and 4) better exploitation of renewable energy sources;



- will ensure efficient coordination with other important actions that promote the implementation of GEOSS and Copernicus in the region of interest (e.g. ConnectinGEO, AfriGEOSS);
- will support the project in networking and access to datasets and monitoring networks.

The final AB membership was established in M6 (July 2016) as outcome of T1.1 (Project Management) to include representatives from stakeholders and decision makers, while keeping the AB at a reasonable size so as to maintain its flexibility to convene and execute its duties.

No	Name	Organisation	
1	Kanaris Tsinganos (GR) – Chair	President of the National Observatory of Athens	
2	Peter Zeil (AT)	Spatial Services Gmbh, Ex EU DG GROW – K2 / Seconded National Expert from Z-GIS	
3	Luca Montanarella (IT)	European Commission (JRC - Chair of the Intergovernmental Technical Panel on Soils)	
4	Ivan Petiteville (FR)	European Space Agency (Directorate of Earth Observation Programmes)	
5	Andiswa Mlisa (ZA)	GEO Secretariat	
6	Joan Masó (ES)	CREAF (Coordinator of the ConnectinGEO project)	
7	Elena Xoplaki (GR)	Justus-Liebig-Un. Giessen (Ass. Prof. Climatology, Climate Dynamics and Change)	
8	Nikolaos Arvanitidis (SE)	EGS (Chair of Mineral Resources Expert Group)	
9	Ayman El Dessouki Ibrahim (EG)	Ex-Chairman of NARSS	

AB Chair Prof. Kanaris Tsinganos underlined that GEO-CRADLE is a very interesting project with an equally interesting geographical distribution and involvement of existing incubators, as well as funding opportunities for start-ups and SMEs interested in using geo-information. He stated that NOA and he personally will provide all support needed to the Project Coordination Team. Prof. Tsinganos suggested that in parallel to the use of EO data and interaction with SMEs, it is worth to interact and exploit existing research by established groups in EO which may play the role of a catalyst in future break-throughs in the area.





AB Member Prof. Elena Xoplaki focused on the need and importance of cooperation between the researchers, the public authorities and the private sector, for the best exploitation of EO to cover the identified needs.



<u>Conclusions and Action Plan</u>

Following discussion about the current situation, the next steps and the roadmap, the partners agreed on the following conclusions and action plan.

CONCLUSIONS:

- Inventory results so far in WP2 are encouraging with good thematic and geographical coverage.
- Efforts by all partners will continue in order to progress with WP3 at the desired quantity and quality.
- Only through teamwork this large job can be tackled. This includes regular communication with WP2 and WP3 leaders who will keep supporting partners. They will be in constant communication to help clarify issues, provide examples of best practice elsewhere in the consortium and to monitor progress of country partners to meet clear expectations.



ACTION PLAN					
No	WP/TASK	RESPONSIBLE	ACTION	DEADLINE	
1	WP2	NOA	 (a) NOA to send to the partners a template letter for the stakeholders whom we want to invite to fill in the survey (each partner will then personalise it for its local stakeholders) (b) NOA will send the questionnaire in word file for facilitating the surveys when needed 	Middle of August	
3	WP2	CIMA	CIMA to send every week to the partners an updated table with the organisations who have filled in the survey in the involved countries	End of each week	
2	WP2	All partners	All partners complete the inventorying in their countries (including surveying, desk research and quality control)	Middle of September	
4	T3.1	INS	INS to complete the Gap Analysis	End of September	
5	T3.2	EARSC	EARSC to send detailed request of information required from the partners for conducting T3.2 (maturity indicators)	End of August	
6	Т3.3	CERT	CERT to send detailed request of information required from the partners for conducting T3.3 (priorities in relation to regional challenges)	End of August	